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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,388	12/12/2003	Young-Sik Huh	030681-607	8513
21839 7590 09/05/2007 BUCHANAN, INGERSOLL & ROONEY PC POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			EXAMINER TSAI, TSUNG YIN	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 09/05/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/733,388

Applicant(s)

HUH ET AL.

Examiner

Tsung-Yin Tsai

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/12/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) 34-42 and 46 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-12, 14-27, 29, 31-33 and 43-45 is/are rejected.
- 7) ☒ Claim(s) 10, 13, 28 and 30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date See Continuation Sheet.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :6/8/2004, 6/30/2004, 6/20/2006, 11/20/2006 and 7/19/2007.

DETAILED ACTION

Restriction received on 6/29/2007 and made of record.

Applicant elected Group I without traverse, where Group I consist of claims 1-33 and 43-45.

Amendment to claims 1, 7-8, 14, 21 and 45.

Canceled claims 34-42 and 46.

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

(1) Regarding abstract:

Examiner requests the applicant to edit the abstract to a limit of 150 words. Currently the abstract has 203 words. Please edit the abstract without adding new matter.

Claim Rejections – 35 USC 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-8, 14-17, 19-27, 31-33 and 43-45 are rejected under 35 U.S.C. 102(b) as being unpatentable over Gu (US Patent Number 5,874,988, IDS).

Gu teaches a system (figure 1) that carries out method (figure 6-8) of generating meta-data block (figure 12) regarding user preference (column 4 lines 45-55) to color characteristics (figure 2-3, figure 12, column 8 lines 15-20) on a computer readable recoding medium (figure 1):

(1) Regarding claims 1, 21, 43 and 45:

A method for generating user preference (column 4 lines 45-55) data regarding a color characteristic (figure 2-3, figure 12, column 8 lines 15-20) of an image, when an image converted (figure 8 step 830 discloses save adjustment to image) to have a color characteristic that a user prefers with respect to a predetermined reference image is referred to as a preference image (figure 6-7 discloses the input of user prefer predetermined image settings), a color characteristic value of the preference image is referred to as a preference value and a color characteristic value of the reference image (figure 8 discloses getting data from the reference image for comparison) is referred to as a reference value, generating {preference value, reference value} (figure 8 disclose the computing of reference and user preference that will led to creating of data block, figure 12 discloses the data structure of the data block) which corresponds to a pair of the preference value and the reference value (figure 8 step 810 discloses

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the pairing computing of user target/preference and reference data, figure 12 discloses the data block); and

generating the pair {preference value, reference value} as preference meta-data (figure 12 disclose the data structure of the meta-data block) having at least one feature block (figure 3 disclose where the information of the feature of figure 3A are analysis), wherein the feature block comprises:

a block header (figure 12 field part name and spot flag are the header of the data block) including a feature identifier (figure 12 field part spot flag states the feature identifier; may it be local or the whole picture) corresponding to information identifying a color characteristic; and

at least one feature descriptor (figure 12 field part spot flag states the feature identifier; may it be local or the whole picture) including the preference value and the reference value (figure 8 step 810 discloses the pairing computing of user target/preference and reference data, figure 12 discloses the data block).

(2) Regarding claims 2 and 22:

wherein the color characteristic (figure 2-3, figure 12, column 8 lines 15-20) is at least one of color temperature, brightness, contrast, and saturation (figure 3 discloses color characteristic such as saturation, hue, luminance, color red, green and blue, figure 8 discloses color characteristics such as gain, gamma and black, column 8 lines 15-20).

(3) Regarding claims 3 and 23:

(a) providing a plurality of images (abstract discloses plurality of selectable reference images) having different color characteristic values (figure 3 discloses color characteristic such as saturation, hue, luminance, color red, green and blue, figure 8 discloses color characteristics such as gain, gamma and black, column 8 lines 15-20) with respect to a predetermined image (figure 6-7 discloses the input of user prefer predetermined image settings); and

setting an image that the user (figure 1 part 110 disclose user interface for user input) has selected from the plurality of images (abstract discloses plurality of selectable reference images) as a preference image (figure 6-7 discloses the input of user prefer predetermined image settings), setting an original image with respect to the preference image (figure 6-7 discloses where user input setting of image) as a reference image (figure 8 discloses getting data from the reference image for comparison), and generating [preference image, reference image] (figure 8 disclose the computing of reference and user preference that will led to creating of data block, figure 12 discloses the data structure of the data block) which corresponds to a pair of the preference image and the reference image (figure 8 step 810 discloses the pairing computing of user target/preference and reference data, figure 12 discloses the data block).

(4) Regarding claims 4 and 24:

(a), further comprising:

installing a unit for controlling a color characteristic of an image (figure 1 disclose the overall unit of user interface and image processing) in an image

display device (figure 1 discloses workstation monitor and target image display);
and

setting an image of which color characteristic is adjusted by a user (figure 6-7 discloses user input for setting) using the unit for controlling a color characteristic, as a preference image (figure 6-7 discloses the input of user preferred predetermined image settings), setting an original image (figure 8 discloses getting data from the reference image for comparison, where the original image is the reference image that is not adjustable by the user) of which color characteristic is not adjusted by the user, as a reference image (figure 8 discloses getting data from the reference image for comparison), and generating [preference image, reference image] (figure 8 discloses the computing of reference and user preference that will lead to creating of data block, figure 12 discloses the data structure of the data block) which corresponds to a pair of the preference image and the reference image (figure 8 step 810 discloses the pairing computing of user target/preference and reference data, figure 12 discloses the data block).

(5) Regarding claims 5 and 25:

generating [preference image, reference image] (figure 8 discloses the computing of reference and user preference that will lead to creating of data block, figure 12 discloses the data structure of the data block) is, when the reference image (figure 8 discloses getting data from the reference image for comparison) has a contents identifier (figure 1 part 105 discloses area of interest, this is the

content identifier selected by the user, figure 3 discloses the analysis of the area of interest), generating [preference image, reference image, contents identifier] (figure 12 field spot flag, where indicate the area of interest that is focus on) which corresponds to a combination of the preference image, the reference image, and contents identifier information (figure 12 disclose the data block regarding preference, reference and content data).

(6) Regarding claims 6 and 26:

wherein the generating [preference image, reference image] (figure 8 disclose the computing of reference and user preference that will led to creating of data block, figure 12 discloses the data structure of the data block) is, when the reference image (figure 8 discloses getting data from the reference image for comparison) has a contents identifier (figure 1 part 105 discloses area of interest, this is the content identifier selected by the user, figure 3 discloses the analysis of the area of interest), generating [preference image, reference image, contents identifier] (figure 12 field spot flag, where indicate the area of interest that is focus on) which corresponds to a combination of the preference image, the reference image, and contents identifier information (figure 12 disclose the data block regarding preference, reference and content data).

(7) Regarding claim 7:

wherein step (a) is,

when the reference image (figure 8 discloses getting data from the reference image for comparison) has a contents identifier (figure 1 part 105

discloses area of interest, this is the content identifier selected by the user, figure 3 discloses the analysis of the area of interest) and when a color characteristic (figure 2-3, figure 12, column 8 lines 15-20) value of the preference image (figure 6-7 discloses the input of user prefer predetermined image settings) is referred to as a preference value and a color characteristic value of the reference image (figure 8 discloses getting data from the reference image for comparison) is referred to as a reference value, generating [preference value, reference value, contents identifier] (figure 12 disclose the data block regarding preference, reference and content data) which corresponds to a combination of the preference value, the reference value, and the contents identifier (figure 12 disclose the data block regarding preference, reference and content data).

(8) Regarding claims 8 and 27:

wherein a color temperature (figure 3 discloses color temperature such as hue, saturation, luminance, color red, green and blue) value in step (a) is obtained by the following steps comprising:

extracting a highlight region (figure 3A display the highlighted area as the area of interest) from an input color image (figure 1 part 105 disclose the highlighted area of interest for extraction/image processing);

projecting the highlight region (figure 3A-3B disclose the projection of the area of interest from extraction) on a chromaticity coordinate (figure 3B discloses the area of interest projected on the chromaticity coordinate of red, green and blue in vectorscope format) and calculating geometric representation variables

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(figure 3B disclose the geometric shape in the vectorscope of color red, green and blue, figure 3C) with respect to a shape (figure 3C discloses the makeup of the image in the shape format) distributed on the chromaticity coordinate (figure 3B discloses the area of interest projected on the chromaticity coordinate of red, green and blue);

estimating a color temperature (figure 3C-3F discloses the processing of the color temperature of in the selected region of interest) from the input color image by perceptive light source estimation (figure 3F disclose the luminance processing); and

selecting geometric representation variables (figure 3B discloses the area of interest projected on the chromaticity coordinate of red, green and blue) around the estimated color temperature (figure 3C-3F discloses the processing of the color temperature of in the selected region of interest) from the geometric representation variables (figure 3B discloses the area of interest projected on the chromaticity coordinate of red, green and blue) and calculating a final color temperature using the selected geometric representation variables (figure 7 discloses the part where the user inputs for adjustment are use to adjust the image).

(9) Regarding claims 14, 16 and 31:

wherein step (a) further comprises,

when [preference value, reference value] exists before [preference value, reference value] in step (a) is generated (), comparing the pair [preference value,

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reference value] generated in step (a) with an existing pair [preference value, reference value] and updating the pair [preference value, reference value] (column 20 lines 10-25 discloses existing of data block, the update and the saving of the new data block),

wherein the updating is (column 20 lines 10-25 discloses the updating by saving of the new data block), with respect to one preference value, when the reference value generated in step (a) is compared (column 4 lines 45-60 discloses where the user can have visually comparing) with the existing reference value and is the same as or similar to the existing reference value, removing the existing reference value (column 20 lines 10-25 discloses existing of data block, the update and the saving of the new data block).

wherein the updating is (column 20 lines 10-25 discloses the updating by saving of the new data block), when quantization levels (figure 12 discloses "Field" teaching regarding quantization level of low, high, peak or medium) of the two reference values are different (figure 8 discloses the getting data of reference image to compare with user target/predetermined, the values of reference and user target are seen as the two reference values that are pair up to be compare), converting a value of high level into a value of low level (figure 8 step 817-825 discloses the adjustment that is seen as converting level values, figure 12 discloses the data structure regarding the number for values such as low, high, peak and medium for the color in the target area of interest) and comparing with each other (figure 8 step 810 disclose comparing function), and when image

contents identifiers (figure 8 step 830 disclose saving data and adjustment, figure 12 field spot flag is part of the saving content identifiers) are added to the characteristic value pairs (figure 8 step 817-825 and 830 discloses the adjusting/adding of the color characteristics), even though the two reference values are the same as or similar to each other (figure 815 disclose the function of seeing if there is a match or not), if the image contents identifiers are different (figure 8 step 815-825 discloses functions carry out for content identifiers that are different), without removing the existing reference value (figure 8 step 815-825 discloses steps of adjusting the values rather than removing the values).

(10) Regarding claim 15:

wherein step (b) further comprising,

when [preference value, reference value] exists before [preference value, reference value] in step (b) is generated, comparing the pair [preference value, reference value] generated in step (b) with an existing pair [preference value, reference value] and updating the pair [preference value, reference value] (column 20 lines 10-25 discloses existing of data block, the update and the saving of the new data block),

wherein the updating is (column 20 lines 10-25 discloses the updating by saving of the new data block), with respect to one preference value, when the reference value generated in step (b) is compared (column 4 lines 45-60 discloses where the user can have visually comparing) with the existing reference value and is the same as or similar to the existing reference value,

removing the existing reference value (column 20 lines 10-25 discloses existing of data block, the update and the saving of the new data block).

(11) Regarding claim 17:

wherein the number of the feature blocks is four (figure 3), and each of the feature blocks corresponds to the four characteristic values (figure 3 disclose the color characteristics such as vectorscope, hue, saturation and luminance).

(12) Regarding claims 19 and 32:

wherein the block header (figure 12 field part name and spot flag are the header of the data block) of the feature block (figure 12 field part spot flag states the feature identifier; may it be local or the whole picture) further comprises a number-of-descriptors value (figure 12 field part disclose the different spots for the values that are been compile in the data block) indicating the number of feature descriptors contained in the feature block (figure 12 field part includes spots, for local or whole of the image, for flag, red, green and blue colors).

(13) Regarding claims 20, 33 and 44:

a Bin number (figure 12 discloses "Type" teaching that there is a bin number) indicating a quantization level (figure 12 discloses "Field" teaching regarding quantization level of low, high, peak or medium) of the characteristic value (figure 12 discloses that different colors characteristics such as red, green and blue);

a contents ID flag (figure 12 discloses "Spot Flag" that teaches the indication of area of interests that is being analysis) indicating the presence of an image contents identifier; and

a contents identifier if the image contents identifier exists.

Claim Rejections – 35 USC 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gu (US Patent Number 5,874,988, IDS) in view of Reuman (US Patent Number 6,069,982).

(1) Regarding claim 9 and 11:

Gu teaches regarding saturation values (figure 3C) in the RGB (figure 3B) and HSV (figure 3D-3F) color space, as well as luminance values (figure 3F).

Gu does not teach YcbCr color space nor where generating the value pixel values by adding the pixels of interest and dividing the added saturation by the number of pixels, as a pixel value.

However, Reuman does teach regarding generating the value pixel values by adding the pixels of interest and dividing the added saturation by the number

of pixels, as a pixel value (column 6 lines 30-45) and YcbCr color space (column 5 lines 60-68).

It would have been obvious to one skill in the art at the time of the invention to employ Reuman teachings to Gu regarding calculating pixel values from one color space to another color space targeting such values as saturation and luminance. Due to different kind of displays and outputs, certain color space display such values in way that would optimizes the showing of that color representation.

The motivation to combine this form of calculation such that estimating the spatial noise characteristics associated with the image would enable the proper target calculation for the saturation and luminance value.

6. Claims 12 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gu (US Patent Number 5,874,988, IDS) in view of Reuman (US Patent Number 6,069,982) as in claim 11, in view of Pettigrew et al (US 2001/0028736 A1).

(1) Regarding claims 12 and 29:

Gu teaches regarding luminance values (figure 3F).

Gu does not teach regarding calculating the luminance Y of the pixel is determined by $Y = 0.299 \cdot R + 0.587 \cdot G + 0.114 \cdot B$.

However, Pettigrew et al teaches regarding calculating the luminance Y of the pixel is determined by $Y = 0.299 \cdot R + 0.587 \cdot G + 0.114 \cdot B$. (figure 8 part 803).

It would have been obvious to one skill in the art at the time of the invention to employ Pettigrew et al teachings to Gu regarding calculating the luminance Y of the pixel in this way.

The motivation to combine the teaching is due to that this way of calculating the luminance Y is seem to be common and acceptable way.

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gu (US Patent Number 5,874,988, IDS).

(1) Regarding claim 18:

Gu discloses regarding color temperature analysis for different color characteristic values in figure 3 of the area of location.

Gu does not disclose expressly values such as 0-3 for each of the different color characteristic values.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to place whatever labeling values for the color characteristics that has been analysis. Applicant has not disclose that labeling values for the color characteristics provides an advantages, is used for a particular purpose or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with either this labeling practice by Gu or the claim 18 because the creation of the meta-data block structure is depend on the setting that the data block

generator where the data block compiler determine what is most efficient for them.

Therefore, it would have been obvious to combine wherein the updating is, when quantization levels of the two reference values are different, converting a value of high level into a value of low level and comparing with each other, and when image contents identifiers are added to the characteristic value pairs, even though the two reference values are the same as or similar to each other, if the image contents identifiers are different, without removing the existing reference value. wherein the number of the feature blocks is four, and each of the feature blocks corresponds to the four characteristic values to one of ordinary skill in this art to modify Gu with to obtain the invention as specified in claim 18.

Allowable Subject Matter

8. Claims 10 and 13 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Examiner suggest that including claims of 10 and 13 together with claim 1 will make the application allowable as a whole.

9. Claims 28 and 30 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Examiner suggest that including claims 28 and 30 together with claim 21 will make the application allowable as a whole.

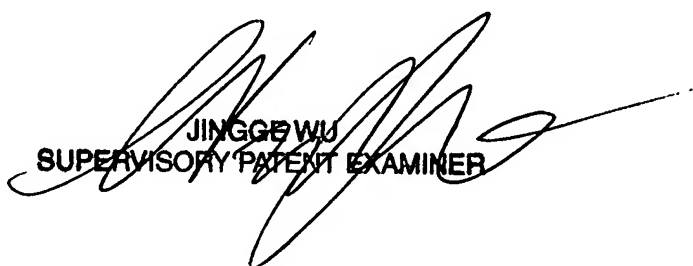
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tsung-Yin Tsai whose telephone number is (571) 270-1671. The examiner can normally be reached on Monday - Friday 8 am - 5 pm ESP.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tsung-Yin Tsai
August 27, 2007


JINGGE WU
SUPERVISORY PATENT EXAMINER